

ABSTRACT OF THE DISCLOSURE

A refractory vessel that can be used as a gasifier for black liquor includes a generally cylindrical metal shell having a dome. A refractory shell has a cylindrical portion spaced inwardly from the metal shell and a dome portion that is spaced
5 inwardly from the metal dome. The refractory shell is sized to provide an expansion gap between the liner and the metal shell. A selectively crushable liner is positioned in the gap. The liner has a predetermined yield stress that will provide controlled resistance to expansion of the refractory shell.